

REMARKS/ARGUMENTS

Examiner's Amendment

Applicant has corrected the claim numbering as proposed by the Examiner changing claims 23-28 to 22-27.

Claim Rejection 35 U.S.C. § 102

Applicant has amended the claims to cancel claims 1 through 10 and 12 through 20 and 24 through 27.

Claim 11 and claim 21 have been amended to incorporate the limitations of their dependent claims and the rejection of these claims is respectfully traversed. As noted by the Examiner, Ishihara describes generally using an MRI machine to deduce the temperature of a patient as affected by radio frequency energy from the MRI machine. Ishihara also teaches modifying the MRI acquisition according to the deduced temperature. Nevertheless, Ishihara differs from the present invention by describing a system of deducing temperature rises by monitoring phase information in the MRI signals. This phase measurement is described at col. 6, lines 1-32. As background, Ishihara also describes at col. 5, lines 41-52, a method of determining temperature by direct measurement of chemical shift in the frequency of water protons.

Not taught by Ishihara is the use of an oscillator to saturate spins in a narrow frequency normally outside of the resonant frequency of water protons to detect the chemical shift of protons. The saturation technique is suitable for implementation in a local coil. Specifically, Ishihara fails to teach extracting tissue temperature by detecting "saturation of spins by a narrow band saturating RF waveform at a resonant frequency of protons at temperatures at the safety threshold" as required by claims 11, 12, and 22.

The method of Ishihara requires complex signal processing, cannot be implemented in a local coil, and does not inherently provide an image demarcating tissue exceeding a temperature limit as is provided by a saturating oscillator.

The rejection of claims 22 and 23 which describe a local coil implementing the method of claim 11 is also respectfully traversed for the reasons described above.

Accordingly, in light of these amendments and remarks, it is believed that claims 11, 21 through 23 are now in condition for allowance and allowance is respectfully requested.

Although no additional fees are believed due for filing this amendment, if an additional fee is deemed to be due, please charge any fee to Deposit Account No. 17-0055.

Respectfully submitted,

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